OPERATORS MANUAL

JOINTER
by
INVICTA

Model
DI-42

INVICTA

English Version

INVICTA USA
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General Instructions

As with all equipment, safety is to be a priority. The operator should understand the safety features and apply good safety habits in transportation, adjustment, maintenance and operation of the machine. Practice and teach others the safe operating procedures of this machine and help to prevent the possibility of accidents.

Safety Rules

1. *For your own safety, read carefully the **Instruction Manual** before attempting to operate the machine.*
2. *If you are not thoroughly familiar and comfortable with the adjustment and operation of the machine, ask for instruction from your supervisor or a fully qualified person. You may also contact **Invicta USA**.*
3. *Before the initial operation of the machine, remove all packaging, shipping grease and fully assemble the machine. Pay special attention to the assembly of safety components.*
4. *Wear proper apparel while operating the machine. Never wear loose fitting clothing, gloves or ties. Always remove rings or other jewelry before operating the machine. It is strongly suggested the operator wear shoes with non-slip soles and also wear a protective hair net to prevent hair entanglement in moving parts.*
5. *Always wear personal safety equipment. Follow the safety regulations of your country and your company.*
6. *Have a certified person make all wiring connections to power source and properly ground the machine.*
7. *Always disconnect the machine from the power source and use lockout procedures before servicing, changing cutting tools and during any cleaning of the machine.*
8. *Before starting the machine, be aware that the work area is clean and free of debris. Cluttered areas are invitations for accidents to occur. .*
9. *Keep the safety guard(s) of the machine in place and in proper working condition. Never operate machinery without safety equipment in place. Report any damage to your supervisor. Keep children and visitors a safe distance from the working area.*
10. *Never leave the machine running while unattended. Turn off the power source during breaks. The machine should come to a complete stop before walking away.*
11. *Do not operate the machine under the influence of drugs or alcohol. Consult your physician when taking medications.*
12. *Do not force the machine beyond its limitations. It will produce a nicer and safer job and at the rate it was designed to operate.*

Additional Safety Rules for the Operation of Jointers

1) Avoid Kickbacks. “Kickback” can occur when the workpiece is forced back by the cutter during improper operation. When “Kickback” occurs an injury can result. Some of the causes of Kickback are:

A- Dull and Improperly Adjusted Knives.
B- Knots, Nails or Imperfections in the workpiece.
C- Heavier Cuts than the machine was designed for.
D- Failure to use a pusher block when jointing or planing short, thin or narrow workpieces.

2) Always maintain the proper relationship of in-feed and out-feed table surfaces to the cutterhead.
3) Never start the work-piece into the cutterhead before allowing it to reach operation speed.
4) Keep the Knives sharp and free of rust and pitch
5) Never perform jointing or planing cuts deeper than l/8” (3 mm).
6) Support and control the workpiece properly all times during the operation.
7) Never reverse the direction of the workpiece after beginning operation. Kickback can occur.
8) Definitions of jointing and planing operations:

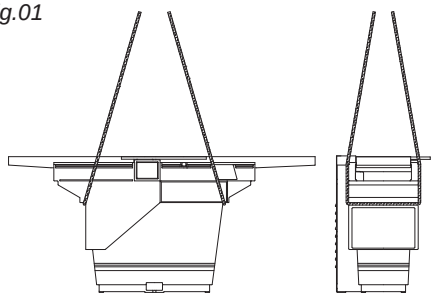
A- Jointing operations: The workpiece is positioned on the jointer with the narrow edge of work piece on the in-feed table and the larger surface positioned against the fence. The workpiece is moved right to left from the in-feed table across the cutterhead to the out-feed table.

B- Planing operations: Planing is a similar operation to the jointing operation except for the position of the work piece. For planing, the larger flat surface of workpiece is placed on the infeed table of the jointer and the narrow edge of the workpiece positioned against the fence.

Loading and Unloading

Never load or unload the machine by the In-feed or Out-feed tables because damage can occur. Lift the machine by straps placed in areas shown in (Fig.01)

Fig.01



Installing the Machine

Level the machine on a solid surface to avoid vibration. See the foundation sketch in (Fig.02)

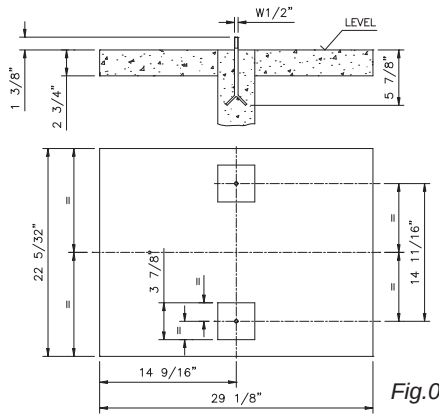


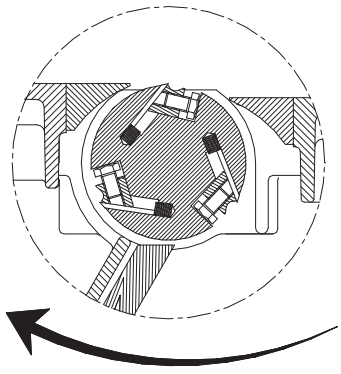
Fig.02

Connecting the Machine to the Power Source

Each machine is provided with a reference plate that indicates the requirements of the electrical service needed for the machine to properly operate. Before you call a certified electrician to make the wiring connections, be sure that the voltage and cycle (phase) stated on this reference plate are the same as provided in your building.

(Electrician) Remove the electrical box cover and connect the electrical supply wires to the proper terminals. Rapidly turn on and off the machine, then visibly check the rotation direction of the cutterhead. It should correspond to the direction indicated on (figure 03.) If not, proceed with the instructions below:
For three-phase machines: invert two wires of the power source without changing the internal connections of the machine. See the electrical diagrams for three-phase on page 06 if further information is needed or contact Invicta USA.

Fig.03



CUTTERHEAD ROTATION DIRECTION

Technical Specifications

In-feed Table……57”

Out-feed Table……43 5/16”

Max Width Capacity……16”

Cutterhead Speed……5000 RPM

Maximum Cutting Depth……1”

Fence Tilting……0º to 45º

Motor Power……7.5 HP

Net Weight……1334 Lbs

Accessories

Normal Accessories

1. Instructions Manual
2. Tool Kit

Optional Accessories

1. Knife gauge

Adjustment Instructions

Cutting Depth Adjustment

The quantity of material to be removed can be from 0” (0 mm) to 3/4” (19 mm) on the infeed table. To adjust the cutting depth, raise or lower the infeed table by loosening lock “G” and moving lever “E” (figure 06) on page 04.

Cutter Adjustment

For the best perfomance of the machine, the knives must be completely aligned parallel with the surface of the outfeed table. The outfeed table should be adjusted no more than 3/64” (1 mm) above the cutterhead surface. (Never allow the outfeed table surface to drop below Top Dead Center of the cutterhead) The outfeed table can be adjusted by loosening the handle “F” (M) and moving the lever “D”. (Figure 6 & 7)

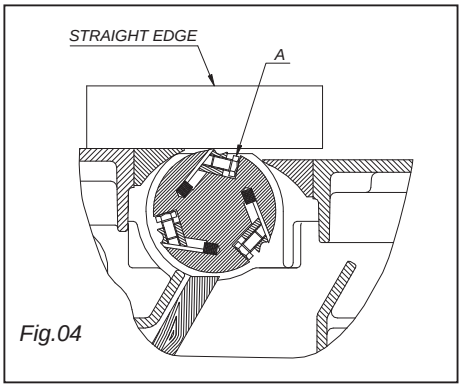


Fig.04

<u>Adjustment of the Knives: (disconnect power supply)</u>
Hold a straight edge firm against the outfeed table and across the cutterhead. Rotate the cutterhead with knife installed. If straight edge touches the knife raise the outfeed table and repeat the process until the knife passes the straight edge without touching. (Lock outfeed table in place) Check each side of cutterhead starting at the fence and then at the operator side. If one side touches and the other does not, the knife is not yet parallel. Continue to adjust knife until perfection is achieved. Securely tighten all screws “A” once final adjustment is made. Follow the same procedure to adjust the other knives remembering to tighten the screws “A” (Figure 04)
IMPORTANT: *The knives must be in the same relation to the straight edge when each knife is Top Dead Center. No lifting of the straight edge should be noticed. The outfeed table is also in its best position. Remember to securely lock the outfeed table.*

Fence Adjustment

The fence can be adjusted in two different ways:

I- For the angular adjustment loosen lock handle "B" and "C". Move the adjustment handle while referencing scale "D" for the degree of tilt required. Re-lock "B" and "C". See Fig.05

2) Adjust the cross movement of the fence in relation to the tables by loosening lock "E" and sliding the fence to the desired position. Re-lock "E". See Fig. 05

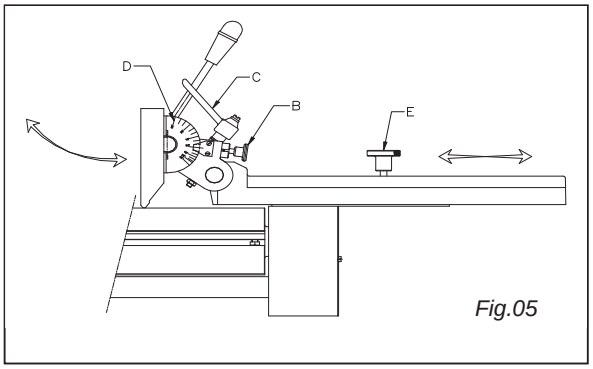


Fig.05

Belts Tension and Replacement

Remove the belt guard to access the belt. Loosen locking nuts "F" & "G" and lift motor to remove belt or press down on the motor to obtain an adequate tension. Re-Lock nuts "F" & "G". See Fig. 06

Table Alignment

This procedure is performed in the factory. If further alignment is required due to damage, proceed as follows: Loosen screw "H" and turn the adjustment bushing "I" with a screwdriver until obtaining the desired alignment between the table and the cutterhead body. Re-Lock screw "H". See Fig. "H"
Caution: For proper performance, the in-feed and out-feed tables must be parallel with the Cutterhead body. Never align tables by referencing from the blades.

Cutters Maintenance

Keep the cutter knives as sets with the same weight and dimensions. Knives used together with different weights will cause imbalance. Sharpen periodically with a fine grain stone and oil, maintaining a cutting angle of 40º.

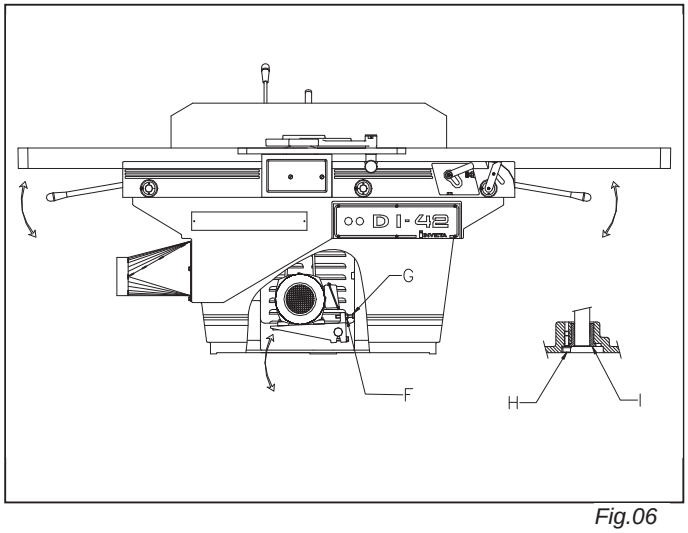


Fig.06

Electrical Protection Equipment

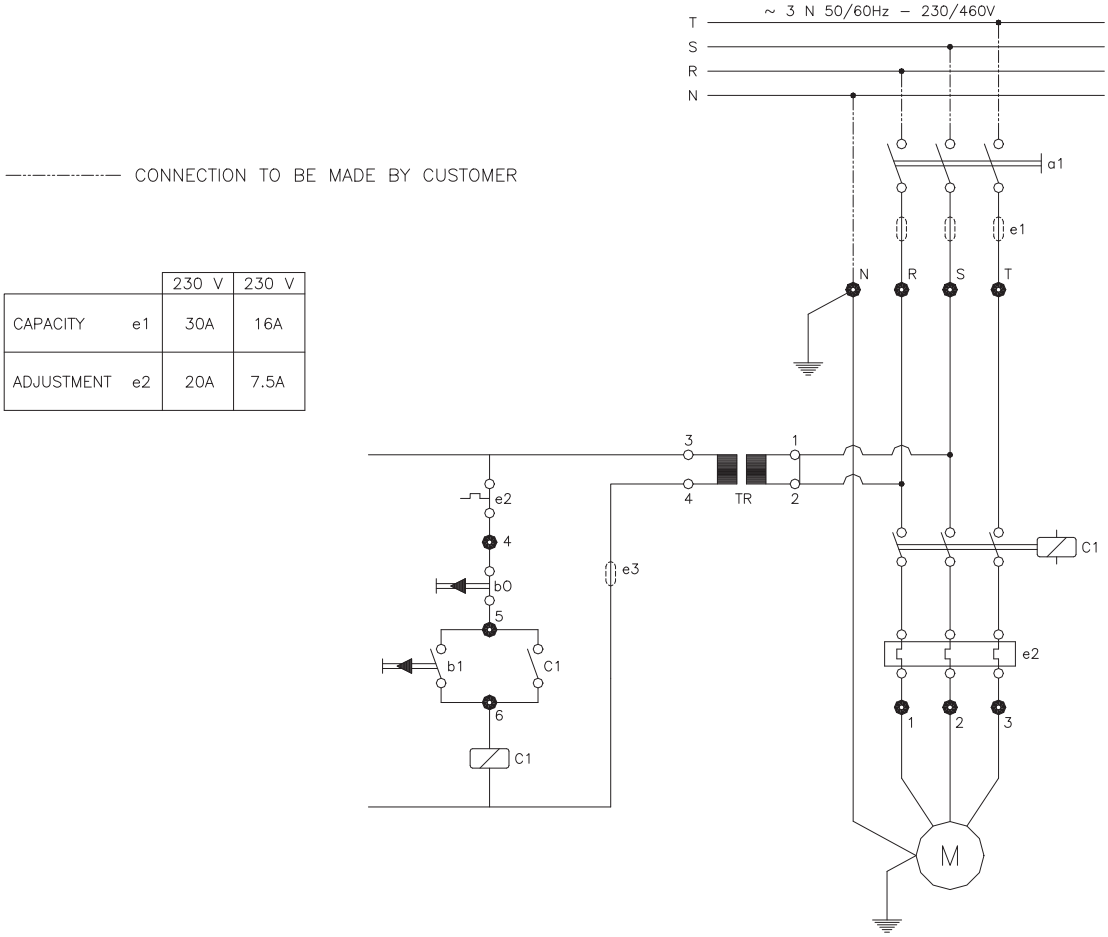
The machine can be optionally supplied with electrical overload protection. This equipment breaks the supply current to the motor automatically when there is an electrical overload that could cause damage. When overload has occurred, it is necessary to reset the thermal relay by pressing the reset button prior activating the start button. See page 07 for electrical diagrams.

Machine Identification and Replacement Parts

Every machine has a manufacturing code (tag) which provides the manufacturer serial number and production date. This manual gives listings of parts that form your machine. They provide description and order numbers. When needed, use original parts; always mention the manufacturing code, part number and quantity desired.

Electric Diagram

THWEE-PHASE MOTORIZATION WITH OVERLOAD PROTECTIONS-7,5CV 230/460V



		230 V	230 V
CAPACITY	e1	30A	16A
ADJUSTMENT	e2	20A	7.5A

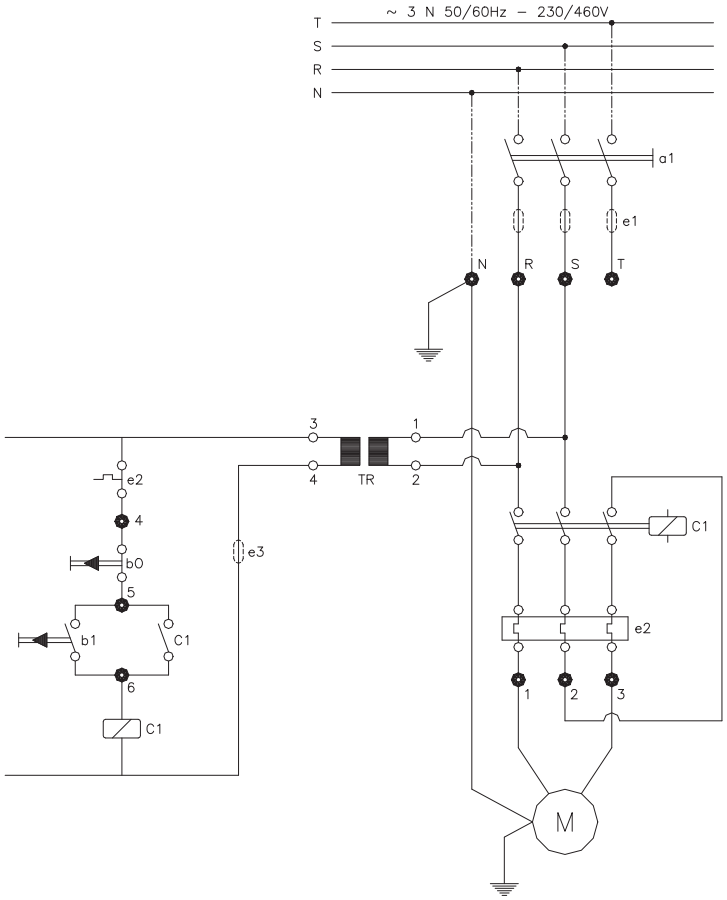
CODO	QTY.	NAME
a1	1	Master switch
C1	1	Contact 3TA11
e1	3	Delayed action fuse 63A – 500V
e2	1	Bi–metal relay 3UA11
e3	1	Circuit breaker 6A

CODO	QTY.	NAME
b0	1	Off button – red
b1	1	On button – green
M	1	3 phase motor 7,5 CV 2 Pole
●	1	Terminal
TR	1	Transformer

Electric Diagram

MONO-PHASE MOTORIZATION WITH OVERLOAD PROTECTIONS - 5CV 230/460V

		230 V	230 V
CAPACITY	e1	30A	16A
ADJUSTMENT	e2	23A	7.5A



CODO	QTY.	NAME
a1	1	Master switch
C1	1	Contact 3TA11
e1	3	Delayed action fuse 63A – 500V
e2	1	Bi–metal relay 3UA11
e3	1	Circuit breaker 6A

CODO	QTY.	NAME
b0	1	Off button – red
b1	1	On button – green
M	1	3 phase motor 5 CV 2 Pole
●	1	Terminal
TR	1	Transformer

—·—·—·—·— CONNECTION TO BE MADE BY CUSTOMER

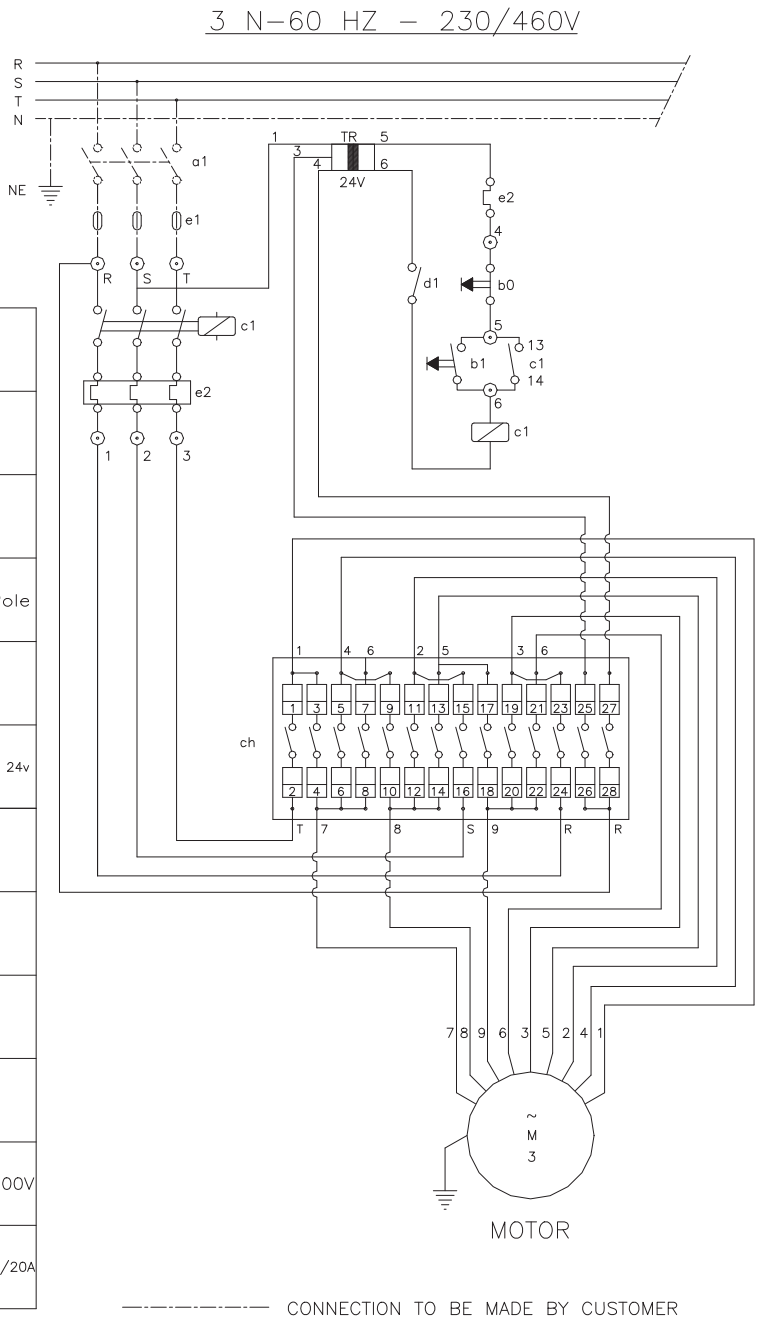
Electric Diagram

SELECT SWITCH – 230/460V

IMPORTANT

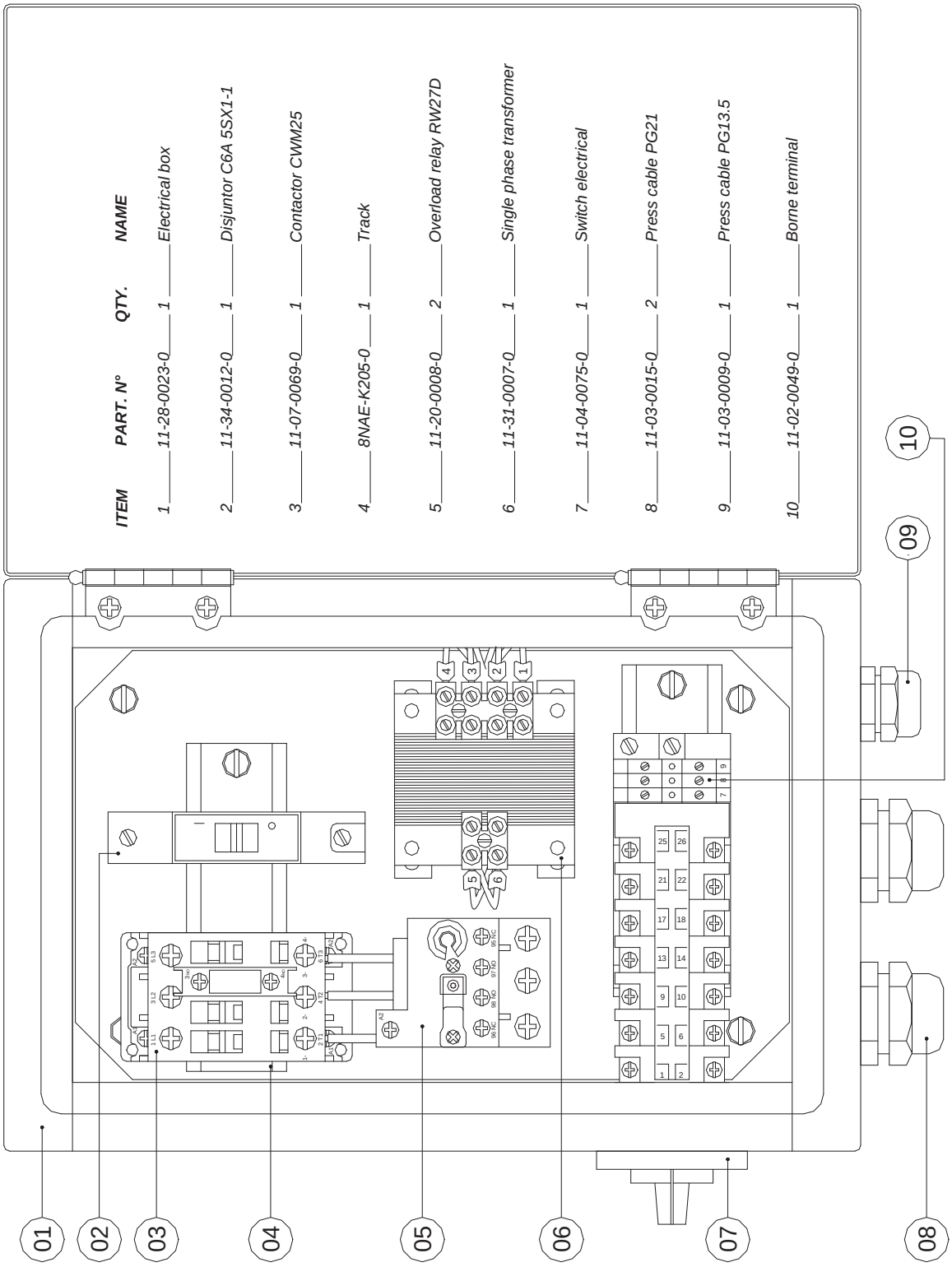
SELECT THE VOLTAGE (230/460V) OF YOUR INTERNAL ELECTRIC NETWORK.
THE VOLTAGE SELECTION KEY IS LOCATED ON THE ELECTRICAL BOX.
FOR YOU SAFETY THE VOLTAGE SELECTION KEY IS ON NEUTRAL POSITION.

CODO	QTY.	NAME
b0	1	Off button – red
b1	1	On button – green
M	1	3 phase motor, 5 CV 2 Pole
⬡	1	Terminal
TR	1	Transformer –Entry 230/460v–Quit 24v
ch	1	Select switch – 230/460v
a1	1	Master switch
c1	1	Contact CWM25
d1	3	Circuit breaker 6A
e1	1	Delayed action fuse 50A – 500V
e2	1	Bi–metal relay RW27D –Adjust c/20A

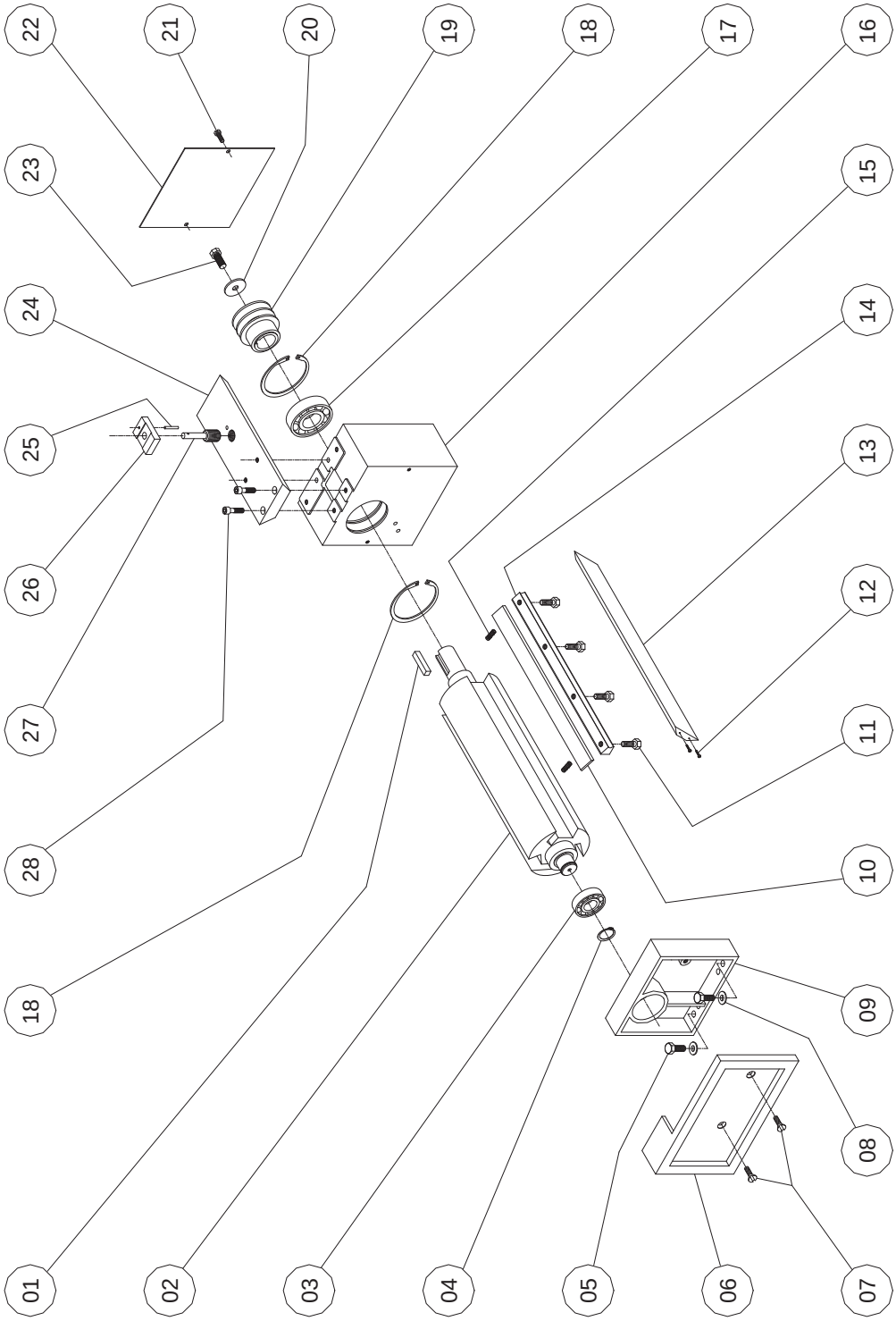


ELECTRICAL BOX

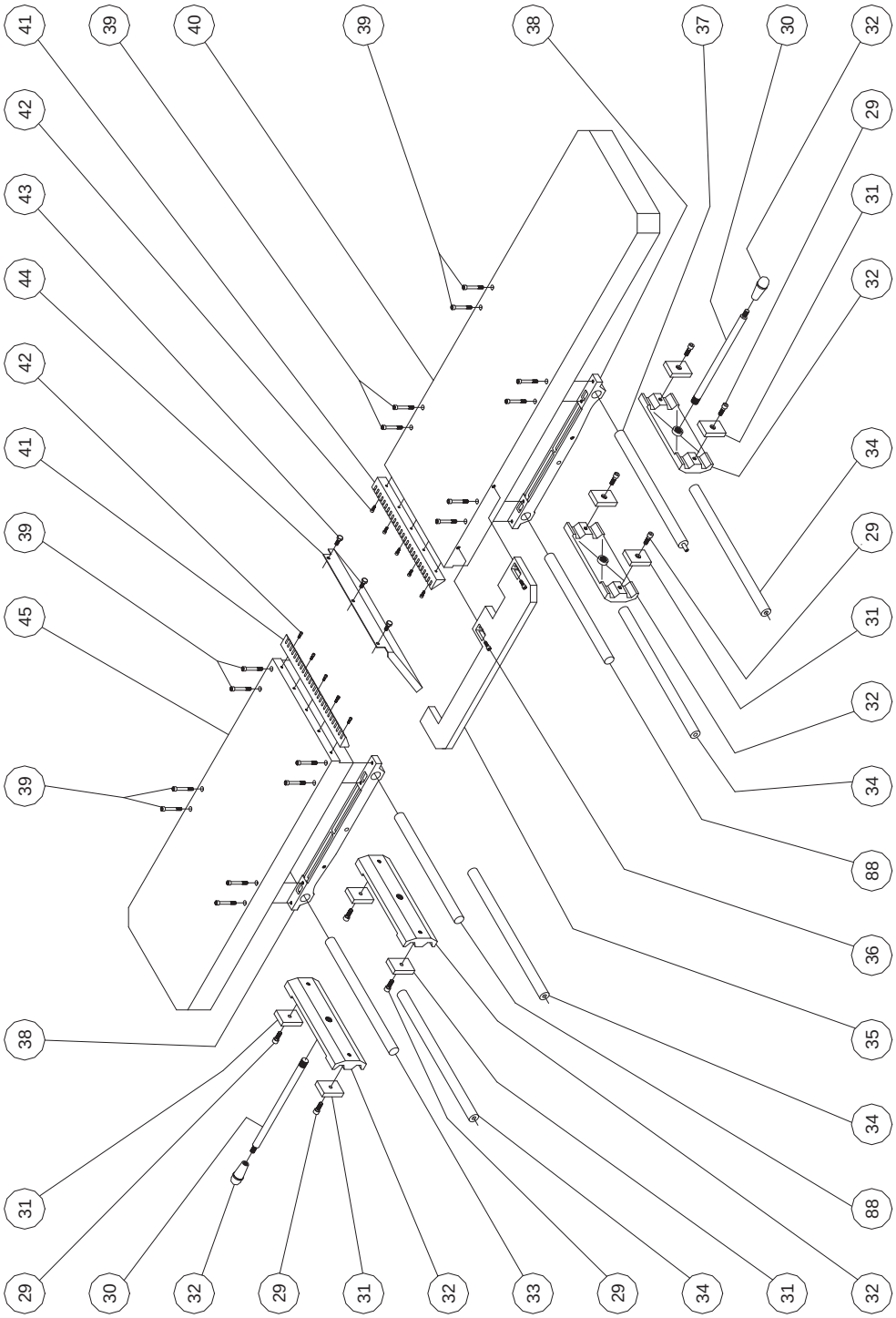
ITEM	PART. N°	QTY.	NAME
1	11-28-0023-0	1	Electrical box
2	11-34-0012-0	1	Disjuntor C6A 5SX1-1
3	11-07-0069-0	1	Contactor CWM25
4	8NAE-K205-0	1	Track
5	11-20-0008-0	2	Overload relay RW27D
6	11-31-0007-0	1	Single phase transformer
7	11-04-0075-0	1	Switch electrical
8	11-03-0015-0	2	Press cable PG21
9	11-03-0009-0	1	Press cable PG13.5
10	11-02-0049-0	1	Borne terminal



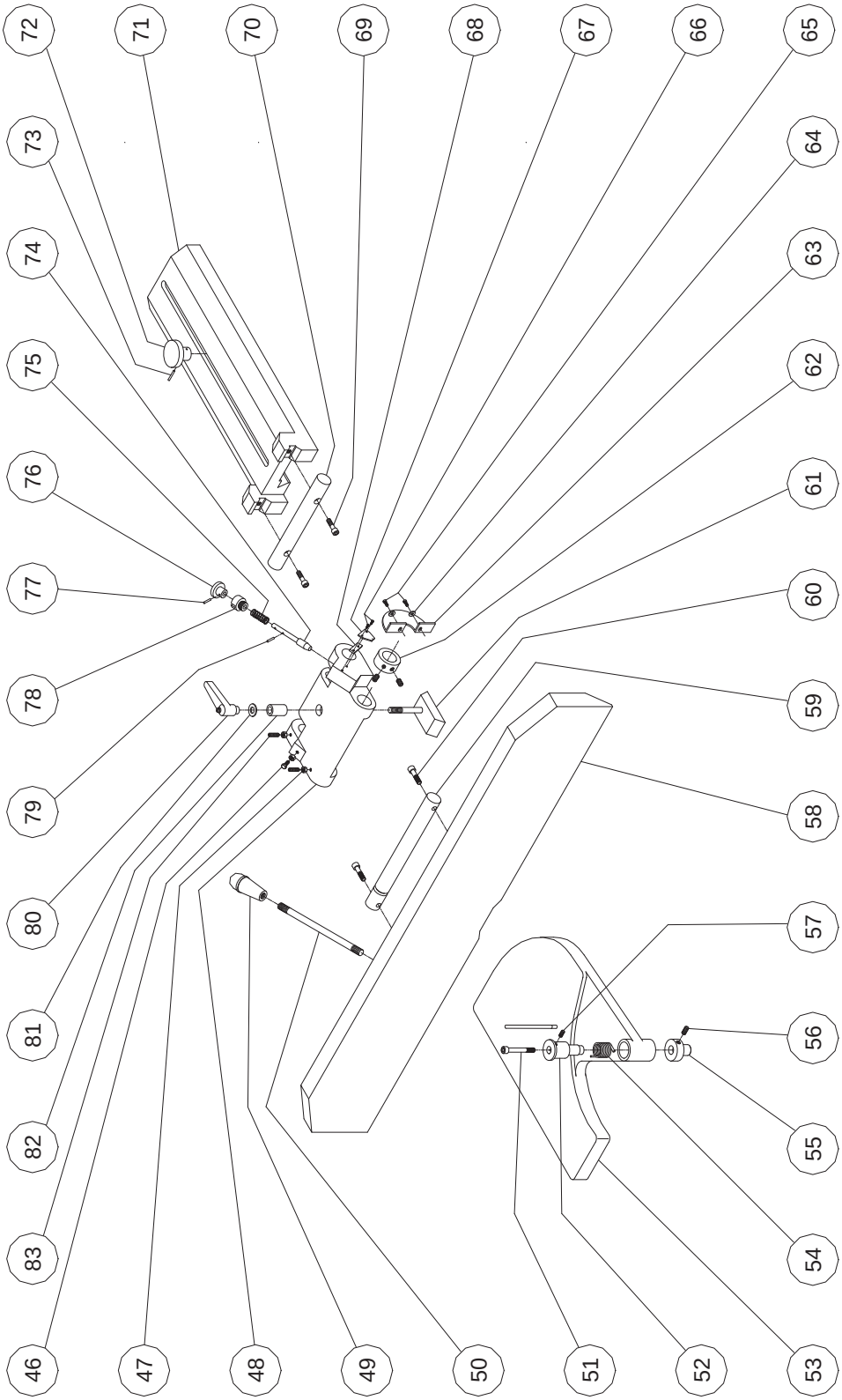
Replacement Parts



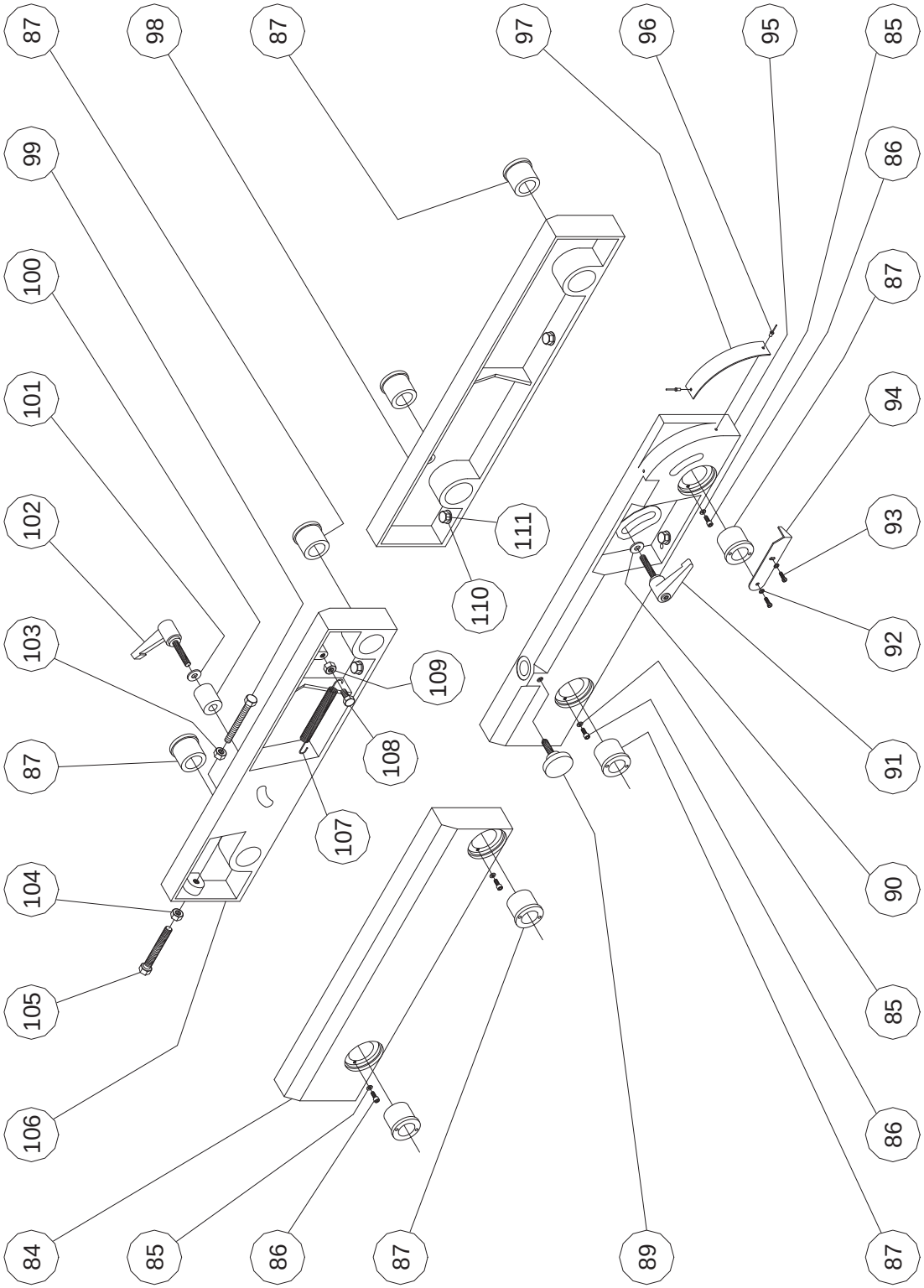
Replacement Parts



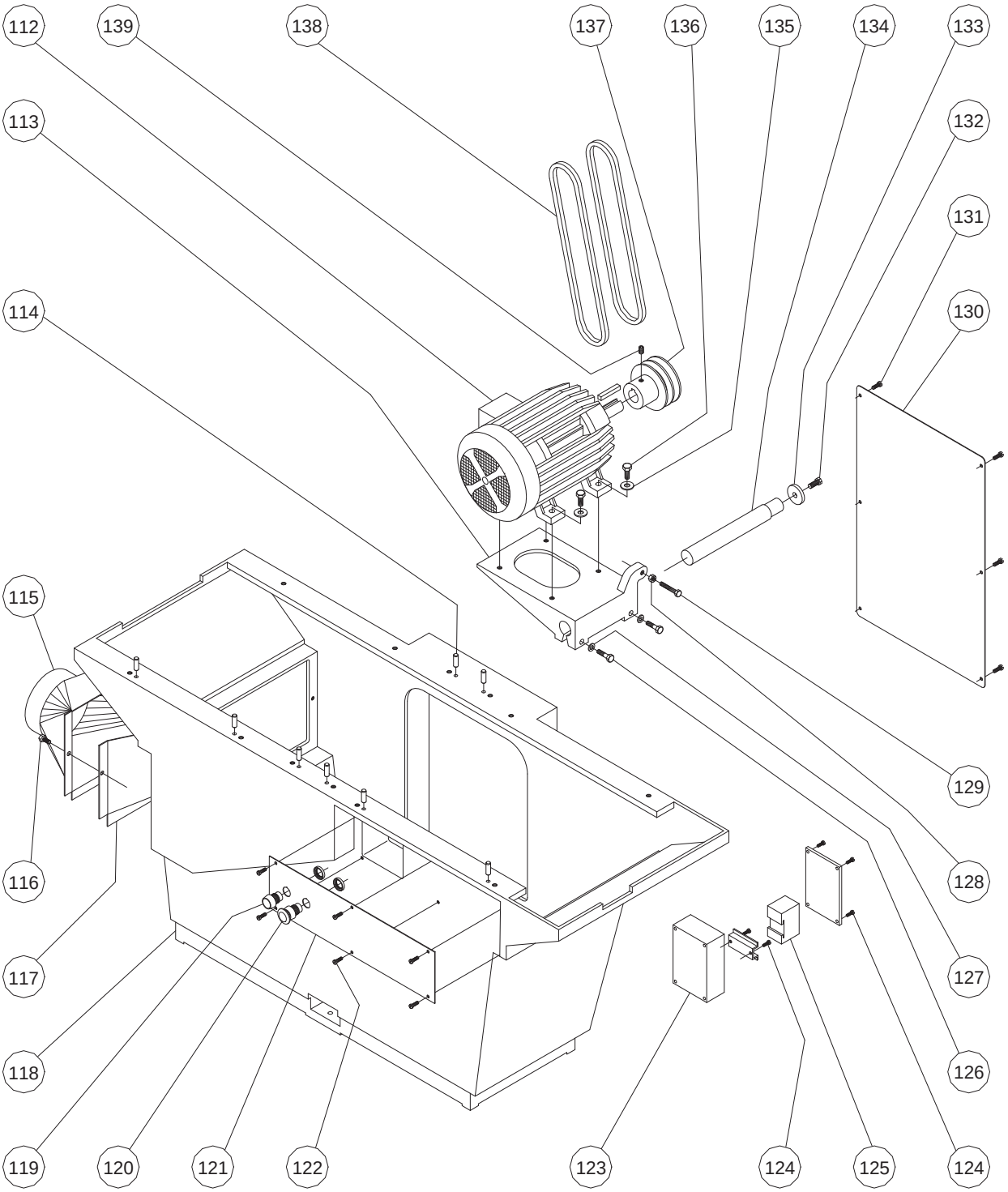
Replacement Parts



Replacement Parts



Replacement Parts



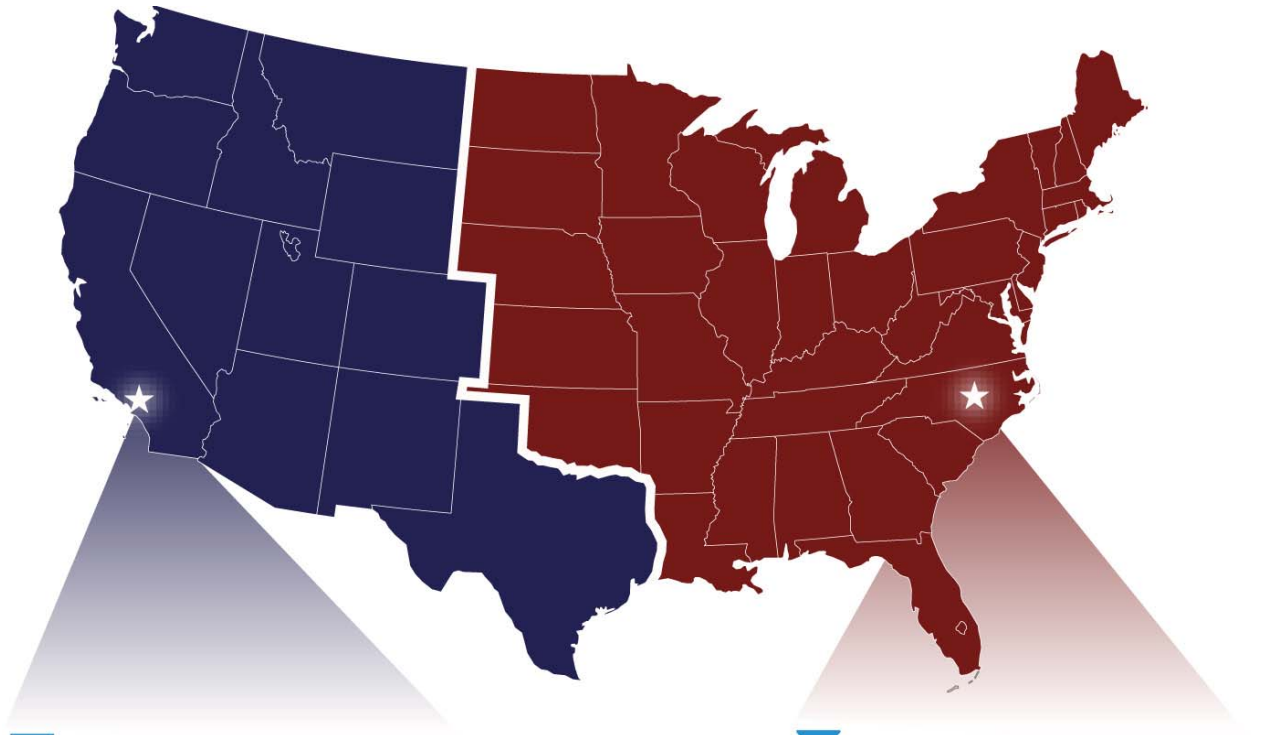
REPLACEMENT PARTS

FIG. Nº	CODE	QTY.	NAME
01.....	8NCV-K310-0	01.....	Cutterhead shaft key
02.....	81DE-KK30-0	01.....	Cutterhead shaft
03.....	03-00-0033-0	01.....	Bearing 6206 2RS
04.....	06-18-0012-0	01.....	Snap ring E.30
05.....	06-03-0097-0	04.....	Hex head cap screw 10x1,5x30
06.....	81DE-KK11-0	01.....	Front bearing cover
07.....	06-06-0035-0	02.....	Flat head screw M8x1.25x50
08.....	06-13-0023-0	04.....	Flat washer
09.....	81DE-KK10-0	01.....	Front bearing casting
10.....	8NFC-KK27-0	03.....	Knives
11.....	8NPF-KK20-0	12.....	Gibb screw
12.....	06-01-0008-0	04.....	Screw
13.....	81DE-KK54-0	01.....	Chip deflector
14.....	8NCV-KK20-0	03.....	Knife gibb
15.....	8NMO-KK55-0	06.....	Knife spring
16.....	81DE-KK12-0	01.....	Rear bearing casting
17.....	03-00-0077-0	01.....	Bearing 6208 2RS
18.....	06-18-0026-0	02.....	Bearing retainer clip I.80
19.....	8NPM-KK93-0	01.....	Driven pulley
20.....	84DS-K100-0	01.....	Cutterhead shaft washer
21.....	06-05-0039-0	02.....	Round head screw M6x1x10
22.....	81DE-KK50-0	01.....	Rear bearing cover
23.....	06-04-0099-0	01.....	Hex head cap screw 12x1.75x30
24.....	81DE-K115-0	01.....	Lower fence slide
25.....	26-05-0002-0	01.....	Roll pin
26.....	81DE-K124-0	01.....	Fixation guide
27.....	81DE-K125-0	01.....	Mounting pin for fixation guide
28.....	06-03-0061-0	02.....	Allen cap screw M8x1.25x30
29.....	06-03-0068-0	08.....	Allen cap screw M10x1.5x50
30.....	81DE-KK46-0	02.....	Table adjusting lever
31.....	81DE-KK43-0	08.....	Fixation plate
32.....	81DE-KKK9-0	04.....	Knob
33.....	8NVL-K362-0	01.....	Upper table shaft
34.....	81DE-KK41-0	04.....	Lower table shaft
35.....	81DE-KK66-0	01.....	Table extension
36.....	06-03-0067-0	02.....	Allen cap screw M8x1.25x90
37.....	81DE-KK40-0	01.....	Upper table shaft
38.....	81DE-K145-0	02.....	Table support
39.....	06-03-0067-0	16.....	Allen cap screw M8x1.25x90
40.....	81DE-KKK3-0	01.....	In-feed table
41.....	81DE-K111-0	02.....	Table end caps
42.....	06-03-0071-0	10.....	Allen cap screw M6x1x20
43.....	06-04-0115-0	03.....	Hex head cap screw M8x1,25x16
44.....	81DE-KK52-0	01.....	Upper chip duct
45.....	81DE-KKK2-0	01.....	Out-feed table
46.....	06-04-0096-0	01.....	Hex head cap screw M6x1x25
47.....	06-09-0019-0	03.....	Hex nut M6x1
48.....	81DE-K113-0	01.....	Fence support casting
49.....	27-00-0007-0	01.....	Knob
50.....	8NPW-K545-0	01.....	Fence adjusting lever
*51.....	06-03-0085-0	01.....	Allen cap screw M10x1, 5x90
*52.....	81DE-KK37-0	01.....	Guard support
*53.....	81DE-KK67-0	01.....	Cutter safety guard
*54.....	81DE-KK36-0	01.....	Spring
*55.....	81DE-KK38-0	01.....	Support bushing for guard
*56.....	06-02-0060-0	01.....	Allen setscrew M8x1.25x16
*57.....	06-02-0043-0	01.....	Allen setscrew M6x1x16
58.....	81DE-K114-0	01.....	Fence
59.....	81DE-K117-0	01.....	Mounting shaft
60.....	06-03-0061-0	02.....	Allen cap screw M8x1.25x30
61.....	81DE-K129-0	01.....	Locking block
62.....	81DE-K119-0	01.....	Locking collar
63.....	81DE-K136-0	01.....	Fence adjustment scale
64.....	06-13-0019-0	02.....	Flat washer
65.....	06-05-0053-0	02.....	Round head screw M4x0,7x10
66.....	06-05-0062-0	02.....	Round head screw M4x0,7x16
67.....	81DE-K122-0	01.....	Scale pointer
68.....	81DE-K123-0	01.....	Support

** 81DE-K011-0 Cutter Head Guard Assembly*

FIG. Nº	CODE	QTY.	NAME
69……..	06-03-0061-0	02…..	Allen cap screw M8x1.25x30
70……..	81DE-K118-0	01…..	Rear mounting shaft
71……..	81DE-K112-0	01…..	Upper fence slide
72……..	8NMN-KK79-0	01…..	Locking Knob
73……..	26-00-0002-0	01…..	Roll pin 3x24
74……..	81DE-K121-0	01…..	Plunger shaft
75……..	07-00-0026-0	01…..	Spring
76……..	8NMN-KK58-0	01…..	Knob
77……..	26-00-0006-0	01…..	Roll pin 3x16
78……..	81DE-K120-0	01…..	Threaded bushing
79……..	26-00-0002-0	01…..	Shaft 3x24
80……..	27-00-0013-0	01…..	Adjustable Handle
81……..	06-13-0015-0	01…..	Flat washer
82……..	81DE-K127-0	01…..	Collar
83……..	06-02-0070-0	02…..	Allen set screw M6x1x25
84……..	81DE-KKK6-0	01…..	Out-feed front casting
85……..	06-13-0013-0	08…..	Flat washer
86……..	06-03-0069-0	08…..	Allen cap screw M6x1x16
87……..	81DE-KK15-0	08…..	Lateral bushing
88……..	8NVL-K361-0	02…..	Upper table shaft
89……..	8NMN-KK56-0	01…..	Locking knob
90……..	06-13-0026-0	02…..	Flat washer
91……..	8NCA-KK34-0	01…..	Adjustable handle
92……..	06-13-0019-0	02…..	Flat washer
93……..	06-05-0043-0	02…..	Round head screw M5x0,8x10
94……..	10-04-0011-0	01…..	Scale pointer
95……..	81DE-KKK4-0	01…..	In-feed front casting
96……..	06-17-0003-0	02…..	Pop AD. 3,2x15
97……..	10-00-0016-0	01…..	Depth Scale
98……..	81DE-KKK5-0	01…..	In-feed rear casting
99……..	81DE-KK47-0	01…..	Adjusting screw
100……	8NAN-K315-0	01…..	Bushing
101……	06-13-0026-0	01…..	Flat washer
102……	27-00-0018-0	01…..	Handle
103……	06-09-0021-0	01…..	Hex nut M10x1,5
104……	06-09-0022-0	01…..	Hex nut M12x1,75
105……	81DE-KK48-0	01…..	Adjusting screw
106……	81DE-KKK7-0	01…..	Out-feed rear casting
107……	07-01-0007-0	02…..	Spring
108……	06-04-0121-0	02…..	Hex head cap screw M10x1.5x30
109……	06-09-0021-0	02…..	Hex nut M10x1,5
110……	06-13-0026-0	08…..	Flat washer
111……	06-04-0121-0	08…..	Hex head cap screw M10x1.5x30
112……	29-34-0030-0	01…..	Motor (specify cap.)7,5cv –2polos
113……	81DE-KK19-0	01…..	Motor plate
114……	81DE-KK71-0	08…..	Roll pin
115……	81DE-K131-0	01…..	Dust extraction manifold (optional)
116……	06-04-0115-0	02…..	Hex head cap screw M8x1,25x16
117……	81DE-KK64-0	01…..	Internal chip duct plate
118……	81DE-KKK1-0	01…..	Base
119……	11-27-0001-0	01…..	ON Button (green)
120……	11-27-0012-0	01…..	Off Button (red)
121……	10-03-0128-0	01…..	Switch/Name Plate
122……	06-05-0039-0	06…..	Round head screw M6x1x10
123……	11-33-0003-0	01…..	Junction box
124……	06-05-0039-0	06…..	Round head screw M6x1x10
125……	11-02-0048-0	01…..	Electrical Terminal Block
126……	06-04-0122-0	02…..	Hex head cap screw M10x1,5x60
127……	06-13-0026-0	02…..	Flat washer
128……	06-09-0021-0	01…..	Hex nut M10x1,5
129……	06-04-0069-0	01…..	Hex head cap screw M10x1,5x80
130……	8NVZ-KKK8-0	01…..	Rear vented cover
131……	06-05-0039-0	06…..	Round head screw M6x1x10
132……	06-04-0121-0	01…..	Hex head cap screw M10x1,5x30
133……	8NAR-K113-0	01…..	Flat washer
134……	81DE-KK49-0	01…..	Motor base pívot shaft
135……	06-13-0026-0	04…..	Flat washer
136……	06-04-0098-0	04…..	Hex head cap screw M10x1,5x35
137……	8NPM-KK40-0	01…..	Motor pulley
138…….	15-00-0030-0	02…..	“V” belt
139…….	06-02-0054-0	01…..	Allen setscrew M8x1,25x10
			OTHER ITEMS
	81DE-2011-0	01….	Knife setting gauge

Parts and Service



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